

### Patent Claims

- 5           1.   Interference pigments based on coated flake-form substrates, characterised in that they comprise
- (A)   a layer of SiO<sub>2</sub> having a layer thickness of 5-350 nm,
- 10           (B)   a high-refractive-index coating having a refractive index  $n$  of  $> 1.8$
- and/or
- 15           (C)   an interference system consisting of alternating high- and low-refractive-index layers
- and optionally
- 20           (D)   an outer protective layer.
2.   Interference pigments according to Claim 1, characterised in that the flake-form substrates are natural and/or synthetic mica, talc, kaolin, flake-form iron or aluminium oxides, glass flakes, SiO<sub>2</sub> flakes, TiO<sub>2</sub> flakes, graphite flakes, synthetic support-free flakes, titanium nitride,
- 25           titanium silicide, liquid crystal polymers (LCPs), holographic pigments, BiOCl or flake-form mixed oxides, or mixtures thereof.
3.   Interference pigments according to Claim 2, characterised in that the flake-form substrates are glass flakes, mica flakes or aluminium oxide flakes.
- 30           4.   Interference pigments according to one of Claims 1 to 3, characterised in that the thickness of layer (A) is 30-100 nm.
- 35           5.   Interference pigments according to one of Claims 1 to 4, characterised in that layer (A) is doped with carbon black particles, metal particles and/or coloured pigments.

- 5 6. Interference pigments according to one of Claims 1 to 5, characterised in that layer (B) consists of metal oxides.
- 10 7. Interference pigments according to Claim 6, characterised in that the metal oxides are  $\text{TiO}_2$ ,  $\text{ZrO}_2$ ,  $\text{SnO}_2$ ,  $\text{ZnO}$ ,  $\text{Ce}_2\text{O}_3$ ,  $\text{Fe}_2\text{O}_3$ ,  $\text{Fe}_3\text{O}_4$ ,  $\text{Cr}_2\text{O}_3$ ,  $\text{CoO}$ ,  $\text{Co}_3\text{O}_4$ ,  $\text{VO}_2$ ,  $\text{V}_2\text{O}_3$ ,  $\text{NiO}$ , titanium suboxides, or mixtures thereof.
- 15 8. Interference pigments according to Claim 6 or 7, characterised in that layer (B) is titanium dioxide.
- 20 9. Interference pigments according to one of Claims 1 to 8, characterised in that layer (C) consists of alternating high- and low-refractive-index layers.
- 25 10. Interference pigments according to Claim 9, characterised in that layer (C) has a  $\text{TiO}_2$ - $\text{SiO}_2$ - $\text{TiO}_2$  layer sequence.
- 30 11. Interference pigments according to one of Claims 1 to 10, characterised in that they have an outer protective layer (D) in order to increase the light, temperature and weather stability.
- 35 12. Process for the preparation of the interference pigments according to Claim 1, characterised in that the coating of the substrates is carried out by wet-chemical methods by hydrolytic decomposition of metal salts in aqueous medium or by gas-phase coating in a fluidised-bed reactor.
13. Use of the interference pigments according to Claim 1 in paints, coatings, automotive paints, powder coatings, printing inks, security printing inks, plastics, ceramic materials, glasses, paper, in toners for electrophotographic printing processes, in seed, in greenhouse sheeting and tent awnings, as absorbers in the laser marking of paper and plastics, in cosmetic formulations, for the preparation of

pigment pastes with water, organic and/or aqueous solvents, and for the preparation of pigment preparations and dry preparations.

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